

OBJECTIVES: To evaluate, through biomechanical tests, which synthetic material used for the manufacturing of test specimens (ABS plastic, polyamide, and polyurethane) shows a better biomechanical behavior for in vitro simulations of load resistance of a fixation method established to mandibular SSRO [Sagittal Split Ramus Osteotomy]. **METHODS:** 30 synthetic and standardized replicas of human hemimandibles with SSRO were divided into 3 groups of 10 samples each: Group A - ABS plastic, Group B - Polyamide, and Group C - Polyurethane. These were fixed by three positional bicortical screws (16 mm length, 2.0 mm system), in an inverted “L” pattern, using drilling guides and advancement of 5 mm. Each sample was subjected to a vertical linear load and the load resistance values recorded at 1, 3, 5, 7, and 10 mm displacement. The standard deviations and means were compared using analysis of variance ($p < 0.05$) and Tukey's test. **RESULTS:** It was observed a tendency for lower values in group B than in groups A and C. In displacements of 3 and 5 mm, there was a difference between groups A and C to group B ($p < 0.05$). In displacements of 7 and 10 mm, there was a difference among the 3 groups, the highest values being found in group C and the lowest ones in group B ($p < 0.05$). **CONCLUSIONES:** Taking into consideration the results achieved and the behavior of each material used as substrate, we can consider that ABS plastic was very flexible and polyurethane very rigid. On the other hand, polyamide samples behaved more likely to the human cortical bone, which can be validated to perform load tests, for SSRO, compared to other tested materials.

PRM10**CALIBRATION OF A COST-EFFECTIVENESS MODEL TO EVALUATE THE INCORPORATION OF A QUADRIVALENT HPV TYPES 6, 11, 16, 18 VACCINE IN ARGENTINA: DISEASE BURDEN COMPONENT**

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OBJECTIVES: To calibrate the disease burden component (mortality and incidence rates from cervical cancer) of a cost-effectiveness model that aims to evaluate the incorporation of a quadrivalent HPV Type 6, 11, 16, 18 vaccine in Argentina. **METHODS:** We adapted a previously developed mathematical model (Elbasha 2010) to evaluate the health and economic impact of routine vaccination of 11 years old females. The model is a dynamic transmission model which estimates the direct and indirect (via herd immunity) health benefits of vaccination. Individuals enter the model as they are born; move between successive age groups at an age, gender and sexual activity specific rates, and exit the model as they die. A systematic search on effectiveness, local epidemiology, resource use and costs was undertaken to populate the model. Selected intermediate parameters (probability of transmitting genital HPV infection per sexual partnership by HPV genotype, and percent of females with cervical cancer that recognize their symptoms and seek treatment) were used for calibration. The perspective used was that of the health care system, with a horizontal span of 100 years and a rate of discount of 5% for costs and health effects. **RESULTS:** The model was properly calibrated with results in a range of $\pm 1\%$ as compared to national vital statistics and Globocan. The model showed an incidence of 5,285 new cases of HPV 16&18 related cervical cancers per year in Argentina and 1,511 deaths for 2013. Eighty-seven and 80% of incident cases and deaths were concentrated in the 35 to 85 age group, and a median age of death of 55 years. **CONCLUSIONS:** The model proved to be an evidence-based, internally valid tool for the assessment of the main HPV related disease burden and can serve as the basis for the further evaluation of the cost-effectiveness of HPV routine vaccination in Argentina.

RESEARCH ON METHODS – Patient-Reported Outcomes Studies**PRM11****MEDICIÓN DE LA CALIDAD DE VIDA POR MEDIO DEL “DERMATOLOGY LIFE QUALITY INDEX” EN PACIENTES CON PSORIASIS: UNA REVISIÓN SISTEMÁTICA**

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OBJECTIVOS: Evaluar la calidad de vida relacionada con la salud en pacientes con psoriasis, medida a través del Dermatology Life Quality Index (DLQI). **METODOLOGÍAS:** Se realizó una revisión sistemática en Pubmed, Cochrane Library, Embase y CINAHL sobre la calidad de vida relacionada con la salud en pacientes con psoriasis leve, moderada y severa. Se incluyeron artículos que evaluarán la calidad de vida en su condición basal mediante la escala DLQI y se reportó el resultado utilizando el Psoriasis Assessment and Severity Index (PASI) como resultado secundario. La búsqueda sólo incluyó estudios en inglés publicados desde 1994 hasta agosto de 2012. Se excluyeron los artículos que comparaban diferentes tipos de tratamiento en términos de mejoría de la calidad de vida antes y después de la administración del medicamento, así como la evaluación de la calidad de vida en diferentes variantes de la enfermedad tales como la artritis psoriásica y psoriasis de las uñas. **RESULTADOS:** Se identificaron ocho artículos que cumplieron con los criterios de inclusión y exclusión que evaluaban la calidad de vida relacionada con la salud en pacientes con psoriasis leve y moderada mediante la escala DLQI. Se evidenció una pérdida de la calidad de vida en los pacientes con psoriasis, en sus actividades diarias y de trabajo, así como en la vida sexual. El promedio de DLQI estuvo entre 6,4 a 10,8; se observó una gran variabilidad en la duración de la enfermedad entre 17,6 y 28,9 años. Un total de dos estudios reportaron el PASI, el cual estuvo entre 6,53 y 10,5, lo que indica enfermedad leve y moderada. **CONCLUSIONES:** La psoriasis afecta la calidad de vida de los pacientes que padecen la enfermedad tanto en su forma leve como moderada, y este deterioro es superior a los encontrados en enfermedades tales como acné, vitiligo, alopecia y urticaria, entre otras enfermedades.

RESEARCH ON METHODS – Statistical Methods**PRM12****THYROID DYSFUNCTION DETECTION IN PREGNANCY: UNIVERSAL SCREENING OR TARGETED HIGH-RISK CASE FINDING? A META-ANALYSIS**

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OBJECTIVES: Recent consensus guidelines do not advocate universal thyroid function screening during pregnancy but recommend testing high-risk pregnant women with a personal history of thyroid or other autoimmune disorders or with a family history of thyroid disorders. Maternal subclinical hypothyroidism during pregnancy is associated with various adverse outcomes. The present study aims to assess efficiency of the targeted high-risk case-finding approach in identifying women with thyroid dysfunction during early pregnancy. **METHODS:** A comprehensive literature search was done in PubMed and EMBASE databases till July 2012 for studies related to screening of thyroid dysfunction. Data was extracted from each relevant article. The primary estimate was pooled odds ratio with 95% CI. Data analysis was done by Comprehensive Meta Analysis software. Heterogeneity was assessed by I^2 statistics. Publication bias was assessed using Begg and Egger test. Sensitivity analysis was also performed. **RESULTS:** A total of 5 studies (published between 2007 and 2011) were found to be pertinent after exclusion of irrelevant studies. Because of significant heterogeneity, a random effects model was chosen. For the effectiveness of universal screening, pooled odds ratio was found to be 2.87 (95% CI, 1.60-4.94, $p = 0.00$). **CONCLUSIONS:** Targeted thyroid function testing of only the high-risk group would miss about one third of pregnant women with overt/ sub-clinical hypothyroidism.

PRM13**DESARROLLO DE UNA ESCALA DE ESTRUCTURAS Y PROCESO PARA LA EVALUACIÓN DE LOS CENTROS DE HEMODIÁLISIS**

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OBJECTIVOS: Desarrollar una escala de indicadores de calidad de estructuras y procesos para los centros de hemodiálisis del Uruguay. **METODOLOGÍAS:** Un conjunto de expertos nacionales elaboró una lista de indicadores basados en estándares que fueron evaluados mediante visitas técnicas en los centros desde 2004 hasta la actualidad. Mediante el Análisis de Coordenadas Principales (AcOP) y la distancia de Gower se estudió el conjunto de indicadores buscando obtener un número reducido de factores que expliquen una proporción importante de la varianza del sistema de indicadores en el período 2007 a 2010. Se construyó la escala de estructuras y procesos empleando como ponderación la mediana de la distancia euclídea entre los indicadores para el espacio de factores obtenidos en el AcOP. Mediante estadística descriptiva se analizó el comportamiento de la escala en el tiempo y respecto de los indicadores originales. Aplicando el criterio de Kaiser se seleccionaron los dos primeros factores del AcOP (varianza explicada 37,63%), el análisis presentó un índice de estrés de 0,1646. **RESULTADOS:** La escala desarrollada mostró una tendencia temporal de mejora en la calidad de las estructuras y procesos brindados por los centros de hemodiálisis. También se observó una asociación significativa con varias de las dimensiones de estructuras y procesos evaluados. **CONCLUSIONES:** Se considera que el instrumento desarrollado es adecuado para la valoración global de las prestaciones en hemodiálisis en las áreas de estructura y procesos.

PRM14**APPLIED COMPARISON OF META-ANALYSIS TECHNIQUES**

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Meta-analysis is an approach that combines findings from similar studies. The aggregation of study-level data can provide precise estimates for outcomes of interest, allow for unique treatment comparisons, and explain differences arising from conflicting study results. Proper meta-analysis includes five basic steps: identify relevant studies; extract summary data; compute study effect sizes, perform statistical analysis; and interpret and report the results. **OBJECTIVES:** This study aims to review meta-analysis methods and their assumptions, apply various meta-techniques to empirical data, and compare the results from each method. **METHODS:** Three different meta-analysis techniques were applied to a dataset examining the effects of the bacille Calmette-Guerin (BCG) vaccine on tuberculosis (TB). Fixed-effect, random-effect modeling and meta-regression were applied for analysis, with added study-level covariates. Overall and stratified results, by geographic latitude were reported. **RESULTS:** Estimates of treatment effect differed depending on the technique applied. When a fixed effect model was applied to estimate the effect of a vaccination against tuberculosis, the log odds ratio was -0.436 (confidence interval [CI: -0.528, -0.344]). After testing for heterogeneity and fitting a random effects model, the estimate was reduced to -0.741 (CI [-1.12, -0.352]), and the CI became wider. When covariates were added to the model to explain the heterogeneity, the treatment effect was reduced even further. All three techniques showed statistically significant effects from the vaccination. However, once covariates were added, efficacy diminished. Independent variables, such as the latitude of the location in which the study was performed, appeared to be partially driving the results. **CONCLUSIONS:** Meta-analysis is useful to draw general conclusions from a variety of studies. However, proper study and model selection are important to ensure the correct interpretation of results. Basic meta-analysis models are fixed-effects, random-effects, and meta-regression.

RESEARCH ON METHODS – Study Design**PRM15****DISPONIBILIDAD Y FUENTES DE LA INFORMACIÓN PARA LA TOMA DE DECISIONES EN REUMATOLOGÍA: USO DE LOS ESTUDIOS ECONÓMICOS**

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OBJETIVOS: Identificar el impacto de la obligatoriedad de presentar una Evaluación Económica (EE) para la inclusión de medicamentos en el Cuadro Básico Nacional en las publicaciones de EE relacionada con el área de reumatología en México. **METODOLOGÍAS:** Se realizó una búsqueda sistemática de las publicaciones de EE y reumatología publicados entre 1995 y 2011. Los estudios de EE fueron clasificados por tres expertos en economía de la salud con base a los criterios de Drummond. Si los estudios contemplan comparación de dos o más alternativas y si valoran los costos y consecuencias de las alternativas examinadas se dice que es un estudio de evaluación económica completa (EEC). Se valoró si la modificación en el año 2003 tuvo impacto significativo en términos de número de publicaciones. **RESULTADOS:** Se identificaron un total de 263 artículos de EE entre 1995 y 2011, 93(35%) de fueron EEC. En el periodo 1995-2002 se identificaron 56 estudios, 19(34%) EEC. En el periodo de 2003-2011 (después de la modificación del reglamento) se identificaron un total de 207 publicaciones de EE, 74(36%) EEC. El 79% de las publicaciones se concentra en el periodo 2003-2011, con un total de 207 publicaciones. Del total de publicaciones las relacionadas con reumatología fueron 3% (n=9) de las cuales 33% fueron completas, 67% fueron parciales. Se destaca que antes de la modificación del reglamento en 2003 se detectó un estudio de EE/reumatología mientras que después del año 2003 el número de publicaciones ascendió a 8 artículos. **CONCLUSIONES:** La EE en México a través del número de publicaciones se ha ido desarrollando notablemente, asimismo el hacer obligatorio el presentar un estudio de EE para la inclusión de un insumo al Cuadro Básico y Catálogo de Insumos del Sector Salud fue un punto de partida para el desarrollo de la EE en México.

RESEARCH ON METHODS – Conceptual Papers

PRM16

A UNIFIED METHODOLOGICAL FRAMEWORK FOR THE ECONOMIC EVALUATION OF THERAPEUTIC MEDICAL DEVICES

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To inform policy decisions economic evaluation (EE) studies require the systematic identification and (quantitative) synthesis of the relevant evidence base on the clinical effectiveness, quality of life (QoL) and costs associated with the use of competing health technologies. Existing methods for EE are linked to principles of evidence-based medicine and, as such, are geared primarily towards the evaluation of pharmaceuticals. Some authors have claimed that medical devices (MDs) cannot be evaluated using the same principles. We take the opposite viewpoint and argue that used within the right evaluative framework existing EE methods are indeed appropriate to assess the cost effectiveness of therapeutic MDs. What makes the (economic) evaluation of MDs challenging is the fact that the quantity, quality, and characteristics of the evidence base around them, is often fragmented, heterogeneous and associated with high levels of uncertainty. In these circumstances it is important to acknowledge the value of eliciting and quantitatively summarising physicians and other experts' beliefs regarding the effectiveness and resource use demands associated with MDs already in use. Using real life examples this paper shows how a Bayesian stepwise iterative approach has helped address some of the challenges associated with the EE of MDs, while guiding policy decisions regarding technology adoption, research funding and design. Relevant steps include: a) identification of existing evidence base and elicitation of experts' beliefs on clinical effectiveness, QoL and costs - i.e. "a priori evidence base"; b) quantitative synthesis of this a priori evidence base to inform the parameters of an EE model; (c) initial estimation of the model; d) assessment of the economic value of conducting further research (Vol); e) collection of new patient level data (PLD) in a pilot study; (f) new evaluation of the EE model updating the prior estimates using primary PLD; g) further Vol analysis.

DISEASE-SPECIFIC STUDIES

CARDIOVASCULAR DISORDERS – Clinical Outcomes Studies

PCV1

COSTS AND CONSEQUENCES OF ORAL ANTICOAGULATION IN ATRIAL FIBRILLATION IN COLOMBIA

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OBJECTIVES: To determine the clinical consequences and its associated costs of the usage of oral anticoagulation therapy for the treatment of atrial fibrillation (AF) in Colombia by establishing the cost per disease related event. **METHODS:** We used a 6-week cycle length, 17 functional state Markov model of the main clinical outcomes in the lifetime of a hypothetical cohort of 1,000 patient with AF per treatment arm. The pivotal clinical studies for apixaban, dabigatran, rivaroxaban compared to warfarin were the source of safety and efficacy data. Data for the analysis was extracted from this literature using indirect comparison methods. Costs in Colombian pesos 2012 are expressed in American dollars (1 US\$ = COP\$ 1785). To estimate costs, we analyzed resource use of a sample of 53 stroke, 148 myocardial infarction, 6 systemic embolism patients in San Ignacio University Hospital. Results were validated by an expert panel. **RESULTS:** The number of events associated with each anticoagulant therapy (apixaban, dabigatran 110mg, dabigatran 150mg, rivaroxaban and warfarin, respectively) were: stroke and systemic embolism 349, 363, 351, 360, 369. ISTH major bleedings 235, 212, 233, 280, 277; clinically relevant non major bleedings 342, 337, 357, 395, 383; myocardial infarctions 102, 114, 116, 101, 104; and event related deaths 459, 485, 475, 469, 481. Apixaban could be associated with savings in non pharmacological cost of \$ 360, \$170, \$145 and \$311 per treated patient compared to dabigatran 110mg, dabigatran 150mg, rivaroxaban and warfarin, respectively. **CONCLUSIONS:** In this

non-pharmacological cost avoidance assessment we determined that apixaban can be a cost saving alternative in the long term. Versus SoC (warfarin), apixaban may be the only NOAC with consistent benefit on all relevant events. Consistent with trial data, lifetime modeling suggested reduction in the mortality.

PCV2

COMORBIDITIES ASSOCIATED TO ATRIAL FIBRILLATION (AF) IN SELECTED LATIN AMERICA COUNTRIES

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OBJECTIVES: AF is the most common chronic cardiac arrhythmia worldwide and is an important risk factor for morbidity related mainly to an increased risk of cerebrovascular events and heart failure. This study examined the prevalence of comorbidities among patients receiving treatment for AF in 4 Latin America countries to convey a more comprehensive picture of the total disease burden. **METHODS:** For study purposes, co-morbidity was defined as the presence of one or more disorders in addition to a primary disease, or the effect of such additional disorders. A 3-step process was conducted in order to understand treatment patterns for patients suffering from AF: 1) health care assessment per country; 2) evaluate patient's information; and 3) data analysis to understand and determine treatment algorithms. Data were collected through 59 face-to-face interviews with cardiologists in Argentina, Brazil, Chile, and Venezuela. **RESULTS:** Analysis per country suggested that, in Chile and Venezuela, 98% and 94% of patients, respectively, reported at least one co-morbidity. In Argentina this pattern was observed in 81% of the patients, whereas in Brazil this was 78%. Findings revealed that the main 5 comorbidities associated with AF were: 1) Hypertension: LatAm 43%, Argentina 28%, Brazil 45%, Chile 43%, Venezuela 33%; 2) Dyslipidemia: LatAm 22%, Argentina 11%, Brazil 25%, Chile 21%, Venezuela 18%; 3) Diabetes: LatAm 13%, Argentina 8%, Brazil 11%, Chile 10%, Venezuela 18%; 4) Cardiopathies: LatAm 8%, Argentina 4%, Brazil 8%, Chile 8%, Venezuela 9%; and 5) Thyroid disease: LatAm 7%, Argentina 4%, Brazil 3%, Chile 12%, Venezuela 9%. **CONCLUSIONS:** Overall, the analysis suggests that hypertension is the main co-morbidity associated with AF, followed by dyslipidemia and diabetes. The health burden carried by patients often extends far beyond AF. Physicians should carefully consider comorbidities and concomitant medications when managing patients.

PCV3

ICEBERG PHENOMENON OF HEART FAILURE IN HOSPITALIZED PATIENTS: A MULTICENTRIC CROSS SECTIONAL STUDY

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OBJECTIVES: Heart failure (HF) ranks high in hospital utilization, cost and quality/safety consequences. We studied occult HF as secondary diagnosis (2Dx) in a multicentric study of the A-HCUPs. **METHODS:** A multi-centric cross sectional study of 1 year hospital discharges adapted HCUPs for Argentina. We estimated HF by HCUPs' CCS#108 SL (heart failure) in 2Dx to measure submerged HF; obtained HF in first diagnosis (1Dx), and 365 day readmissions (ReH), <30 day ReH, mortality and case fatality. 2Dx1=first secondary Dx; 2Dx5=fifth 2Dx, etc. International dollars PPP, (UN Data: 1Arg\$ = 1.608 PPP, 2008) were used. **RESULTS:** Among 45466 discharges ≥19 years old, we found 1178 discharges with CCS#108 among 1Dx (incidence: 2,59%; 95%CI 2,44-2,74%); mortality 0,24% ** (95%CI 0,20-0,29%); 365 days ReH was 60,9% (95%CI 58,1-63,7%) and <30 day ReH of 18,1% (95%CI 15,9- 20,3%). 864 discharges had CCS #108 (HF) among any 2Dx (from 1 to 10 2Dx), (incidence: 1,90%; 95%CI 1,77-2,03%) (p<0,001 vs*), descending from 2Dx1: 316, 2Dx5: 89; and 2Dx8: 36 discharges. HF was one among several multi-morbid conditions. Outcomes of discharges with 2Dx1 are 365 day ReH: 57,3 % (95%CI 51,8-62,7%) and <30 day ReH: 17,1% (95%CI 12,9- 21,2%), mortality 0,09 (95%CI 0,06-0,12%, (p<0,001 vs*), case fatality: 12,66% (95%CI 8,99- 16,32%). Mean cost per discharge was 7 907 \$ PPP and median cost 1 917 \$ PPP for HF in 1Dx; while mean was 23316 \$ PPP and median cost 12796 \$ PPP for CCS #108 in 2Dx5. **CONCLUSIONS:** HF is the leading CCS among several criteria of ranking of discharges. Is one of the leading causes of admissions as detected by 1Dx. However, HF is frequently submerged as a 2Dx, causes significant mortality, costs and readmissions (ReH). Quality, safety and economic studies should consider HF as secondary diagnosis.

PCV4

PERMANENT TRANSVENOUS LEAD EXTRACTION: FACTORS INFLUENCING THE DIFFICULTY OF THE PROCEDURE

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OBJECTIVES: Transvenous lead extraction is increasingly required. The aim of this study was to determine which factors influence the difficulty of a lead extraction procedure through the analysis of a high-volume centre database. **METHODS:** A total of 889 permanent leads were extracted from 469 patients. Factors influencing the difficulty of a procedure were assessed using a multivariate logistic regression model. The fluoroscopy time of the procedure was taken as index of difficulty. **RESULTS:** From January 2003 to December 2012, 932 of 946 (98.5%) leads were completely removed. Major complications occurred in 1.3% patients. No deaths occurred. Median fluoro time was 8.4 min (3.2 - 17.1). A procedure was classified as difficult when fluoro time was greater than 31.2 min (90th percentile). At a multivariate analysis the predictors of a difficult procedure were the number of extracted leads (OR 1.71, 95%CI 1.06 - 2.8), the presence of screw leads (OR 5.68; 95%CI 1.9 - 16.9), the presence of dual coil shock leads (OR 5.01, 95%CI 1.27 - 19.8), the years since the oldest lead was implanted (OR 1.23, 95%CI 1.15 - 1.31), the absence of leads with vegetation (OR 6.76, 95%CI 1.35 - 33.3). The female gender, the patient age at extraction, the presence of tachy leads, the presence of lead failure weren't predic-